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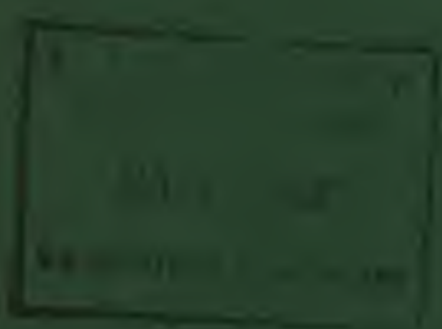
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FOREST STATISTICS  
FOR  
SOUTHWEST GEORGIA, 1951

by

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FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION  
ASHEVILLE, NORTH CAROLINA

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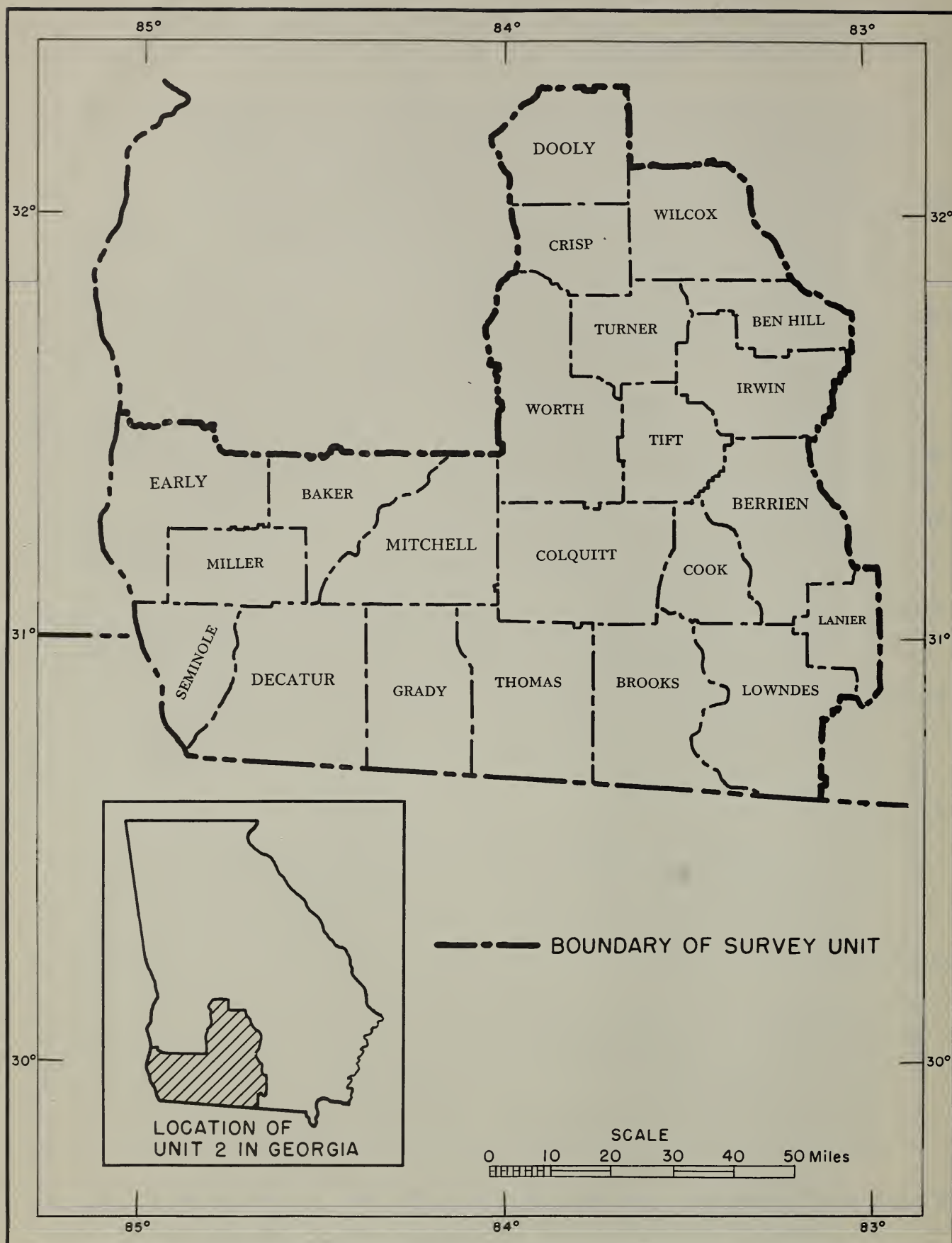


Figure 1.--Counties in Southwest Georgia included in Survey Unit No. 2

## FOREST STATISTICS FOR SOUTHWEST GEORGIA, 1951

This progress report presents statistical data on forest area and timber volumes for 22 counties in Southwest Georgia designated as Survey Unit No. 2 (fig. 1). The data were obtained from a resurvey of the forest resources in the State which was started in July 1950. Field work for the Southwest Georgia Unit was completed in April 1951. The land area and timber volume estimates are based on combined use of aerial photographs and ground sample plots.

The original Forest Survey of Southwest Georgia was made in 1934. Comparisons of the statistics from both surveys have been made to determine the changes and trends which have taken place during the past 16-year period.

### 1951 HIGHLIGHTS AND SIGNIFICANT CHANGES

Small increase in forest land area: The Southwest Georgia Survey Unit encloses a total land area of 5.6 million acres, of which 54 percent, or nearly 3.1 million acres, is occupied by forests (fig. 2). During the period between surveys the acreage of forest land increased 37 thousand acres, or about 1.2 percent. Most of the remaining land area is in agricultural use, with 37 percent classified as active and 6 percent as idle. Other land uses such as urban and industrial areas, rights-of-way, etc. occupy only 3 percent of the total land area.

Nearly 98 percent of the forest land in the Unit is in private ownership, the remainder being held by Federal, State, or county and municipal agencies. Farmers own 85 percent of the private forest acreage. Practically all of the forest land can be considered commercial in character, since less than 100 acres are included in parks or other areas where timber cutting is not permitted.

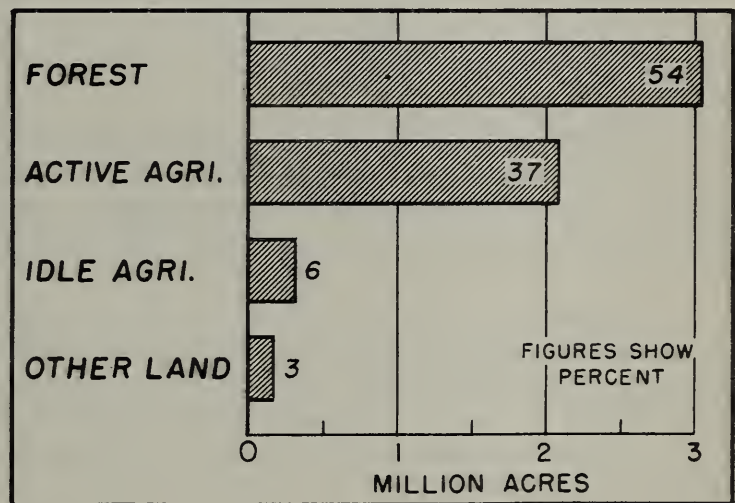
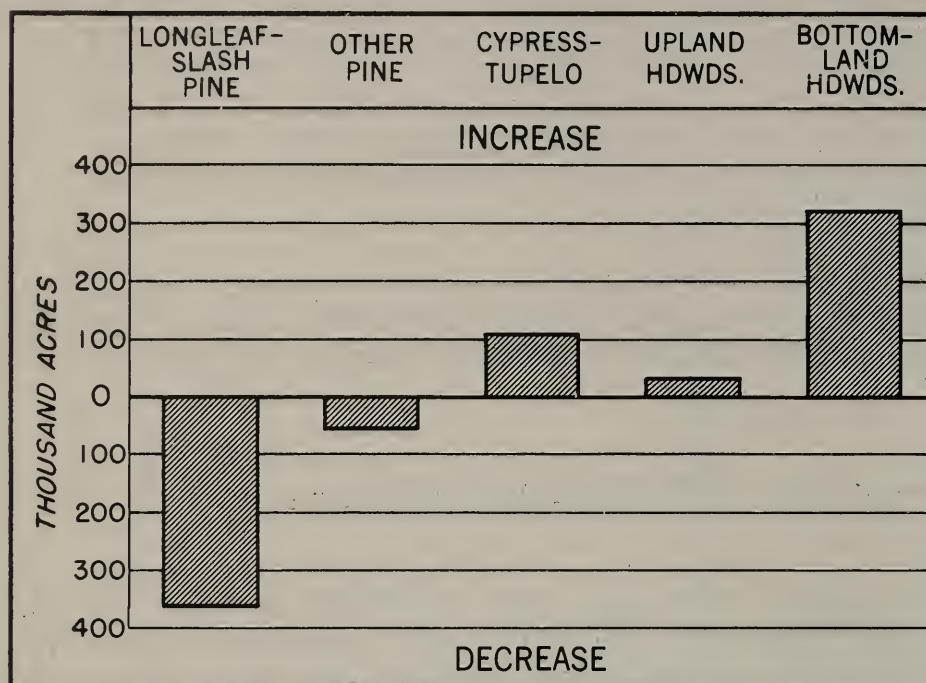


Figure 2.--Land use in Southwest Georgia, 1951

Pine forest types decrease in area: The extent of the forest area in pine types has decreased materially since 1936. Acreage comparisons



based on type definitions used in the original survey indicate that the area of longleaf, slash, and other pine types decreased more than 400 thousand acres, or 16 percent. This acreage has been taken over largely by hardwoods, with the greatest increase in the bottomland hardwood type (fig. 3).

Figure 3.--Change in area of forest types, 1934 to 1951

These shifts in the composition of the forests are primarily the result of cutting practices used in harvesting timber. Where stands of pine are mixed with hardwoods or cypress, the preferred pine timber is often cut, leaving the less desirable species to occupy the site.

Under resurvey standards which divide the forest into types on the basis of cubic volume or number of stems, the pine types still predominate, occupying more than 1.8 million acres, or 60 percent of the forest land. Hardwood types, including hardwood-pine mixtures, occur on 1.1 million acres, or 37 percent, and the cypress type occupies the remaining 3 percent.

Large increase in young timber: The number of sound trees in the sapling, pole, and small saw-timber size classes increased sharply during the period between surveys. This increase occurred in all species groups and amounted to 75 percent, or more than 300 million trees. The hardwood species groups exhibit the greatest gain, particularly the hard-textured hardwoods including the oaks and hickories. The changes by species group and diameter class are shown in table A.



Table A.--Percent change in the number of sound trees by species  
group and diameter class

D.b.h. class (inches)	Pine	Cypress	Soft-textured hardwoods	Hard-textured hardwoods	All species
2	+22	+107	+194	+183	+105
4	+18	+ 61	+166	+230	+ 73
6	+17	+ 87	+ 51	+119	+ 36
8	+18	+ 56	+140	+130	+ 42
10	+28	+ 44	+171	+217	+ 59
12	+17	+ 94	+ 79	+ 61	+ 33
14	- 4	+ 59	+ 66	+ 72	+ 16
16	-10	- 10	+ 24	+ 72	+ 5
18	-20	- 29	+ 40	+ 43	+ 1
20+	-30	- 11	- 27	+ 58	- 14
All diameters	+19	+ 83	+160	+177	+ 75
All trees 6" and larger	+16	+ 68	+ 83	+118	+ 37

Considering only the trees 5.0 inches d.b.h. or larger, the number of pine trees increased 16 percent. This increase is due entirely to a greater number of trees in the 6-inch to 12-inch diameter classes. In contrast, the number of pine trees in the larger, more valuable sizes decreased heavily, showing the effects of more intensive utilization. Similar trends are exhibited by the cypress and soft-textured hardwood groups, although the decrease in the larger sizes was not as heavy. Trees in the hard-textured hardwood group show increases in number throughout all diameter classes, indicating that the impact of timber cutting was not as heavy on the oaks, hickories, and other hard hardwoods.

Some of the increase in the number of smaller trees is undoubtedly due to a shift from old-growth to second-growth conditions. However, most of the change may be attributed to more intensive fire protection. Other measures, including better cutting practices, reforestation, and more conservative turpentining programs, have also had their effect.

The number of cull trees in the stand has also shown an appreciable increase since 1934 with most of the added volume being in rotten cull hardwoods. Trees with any marked degree of defect, either sound or rotten, are seldom removed in cutting operations. Thus, cull trees tend to accumulate in the stand unless silvicultural measures are taken to remove them.

Saw-timber volume increases 13 percent: Saw-timber trees in Southwest Georgia contain a total volume of 5.5 billion board feet. The predominating pine species make up 3.8 billion, or 69 percent, of this total. The volume of hardwood saw timber amounts to 1.4 billion board feet, or 26 percent, and cypress accounts for the remaining 5 percent. A comparison of the 1951 board-foot inventory volume with the volume found in 1934 shows an over-all increase of 13 percent. The pine volume increased only slightly, but the volumes of hardwood and cypress species were up 42 percent, as shown in table B.

Table B.--Change in volume of saw timber, 1934 to 1951

Species group	1934 <sup>1/</sup>	1951	Change
	<u>Million bd. ft.</u>	<u>Million bd. ft.</u>	<u>Percent</u>
Pines	3,716	3,835	+ 3
Hardwoods	1,005	1,429	+42
Cypress	187	266	+42
All species	4,908	5,530	+13

<sup>1/</sup> Original survey volumes have been recomputed to allow for changes in standards between surveys and to provide a uniform basis for comparison. Thus, they will not agree with volumes previously published.

Slash pine is the most abundant species, with longleaf pine next in importance. Together, these two species make up nearly three-fourths of the pine saw-timber volume and more than half of the total volume including all species. Most of the pine board-foot volume is in small trees. The 10- to 12-inch diameter class contains 52 percent, the 14- to 18-inch contains 38 percent, and only 10 percent is found in trees 20 inches d.b.h. or larger. The size of the average pine saw-timber tree is 11.9 inches in diameter at breast height.

Hardwood sawlog quality poor: The board-foot volume of hardwood saw-timber trees is largely of poor quality. Using hardwood log-grade rules developed by the Forest Products Laboratory, based on specifications of the National Hardwood Lumber Association, only 16 percent of the net hardwood volume qualified as select or grade 1, and 24 percent as grade 2. The remaining 60 percent is almost equally divided between grade 3A logs, which contain a large proportion of low-grade factory lumber, and grade 3B logs, which are primarily suitable for cross ties and timbers.

In contrast, 20 percent of the softwood sawlog volume was grade 1, nearly half was grade 2, and only one-third was classified as grade 3. The softwood trees were graded using rules adapted from the Crossett Log Grades.

Sound growing stock volume increases 21 percent: The total growing stock volume is computed in terms of cubic feet and standard cords. It includes trees of pole-timber size (5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods) as well as the larger saw-timber trees. Trees below 5.0 inches in size are considered saplings or seedlings and are not assigned volumes for inventory purposes.

During the past 16-year period the volume of primary (sound tree) growing stock increased 288 million cubic feet, a gain of 21 percent. As shown in table C, there was a small but encouraging increase in pine volume, and the volumes of both hardwood and cypress timber were up sharply.

Table C.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1951

Species group	Primary growing stock			Secondary growing stock		
	1934 <sup>1/</sup>	1951	Change	1934 <sup>1/</sup>	1951	Change
	<u>Million</u> <u>cu. ft.</u>	<u>Million</u> <u>cu. ft.</u>	<u>Percent</u>	<u>Million</u> <u>cu. ft.</u>	<u>Million</u> <u>cu. ft.</u>	<u>Percent</u>
Pines	1,037	1,087	+ 5	11	2/ 34	+209
Hardwoods	298	508	+70	159	342	+115
Cypress	56	84	+50	6	9	+ 50
All species	1,391	1,679	+21	176	385	+119

<sup>1/</sup> See footnote 1, table B.

<sup>2/</sup> Limb volume of saw-timber-size hardwood trees excluded.

The increase in sound growing stock volume in terms of cubic feet or cords is, of course, due primarily to the large increase in the number of small trees. Pine timber makes up about two-thirds of the total cubic volume and hardwoods account for most of the remainder.

The cubic volume of secondary growing stock (cull trees) has more than doubled during the period. The increase in cull pine timber amounts to more than 200 percent, but the actual increase in volume is small. However, the increase in cull hardwood volume is significant in terms of volume. It means that two out of every five hardwood trees 5.0 inches d.b.h. and larger were culls from the standpoint of sawlog merchantability, either now or prospectively. The tremendous increase in hardwood volume, much of it cull or of low quality, is one of the most serious problems facing forest managers today.



Considerable acreage will require planting: About 280 thousand acres of forest land in the seedling and sapling and poorly-stocked stand-size classes are less than 40 percent stocked with sound trees and lack the necessary seed trees to restock the areas naturally. These idle acres will require planting if they are to be made reasonably productive in the near future. About half of the acreage is suitable for the operation of tractor-drawn planting machines, and the rest would require hand planting, since the areas needing planting are less than 10 acres in size, or because ground conditions would prohibit the use of planting machinery. This classification was limited to the pine, hardwood-pine, and upland hardwood forest types where the planting of pine seedlings could be commercially profitable.

Gum naval stores activity diminishes: The number of slash and longleaf pines being worked has decreased by nearly four and one-half million trees, or 32 percent, since 1934. The number of resting trees is down 54 percent, and four-fifths of the worked-out trees have disappeared. The acreage of slash and longleaf stands in working timber crops is also down sharply, having dropped from 850 thousand acres to about 340 thousand. On the other hand, the number of round trees 9.0 inches or larger in diameter which are suitable for gum-farming has more than doubled during the period.

Timber stocking pattern varied: Considering all sound trees of seedling, sapling, and larger sizes, about one-third of the forest land was found to be in a poorly-stocked or nonstocked condition, having less than 40 percent of the required number of trees per acre. The productivity of these lands will be low until they are restocked either naturally or through planting programs.

At the other extreme, 38 percent of the forest land was found to be in an overstocked condition, having more than the required number of trees for full stocking. In time, the stocking in many of these stands will be reduced through natural mortality or other agencies, but there are undoubtedly many areas which will require silvicultural treatment to prevent stagnation and provide for a reasonable rate of growth.



Table 1.--Gross area<sup>1/</sup> by broad use class, 1951

Class of use	Area	
	<u>Thousand acres</u>	<u>Percent</u>
Forest land:		
Commercial	3,057.5	53.8
Noncommercial	0	--
Reserved		
Commercial	(2/)	--
Noncommercial	0	--
Total forest	3,057.5	53.8
Nonforest land:		
Agriculture - active	1,954.9	34.4
Agriculture - idle	312.2	5.5
Pasture	135.5	2.4
Marsh	22.2	0.3
Urban & other <sup>3/</sup>	158.5	2.8
Total nonforest	2,583.3	45.4
Total land area	5,640.8	99.2
Total water area <sup>4/</sup>	43.0	0.8
All classes	5,683.8	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Negligible.

3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

4/ Census water area adjusted to exclude 14.8 thousand acres classified as land area by the Forest Survey, and to include 25.8 thousand acres defined by the Bureau of the Census as land area.

Table 2.--Ownership of land, 1951

Class of ownership	All land		Commercial forest land	
	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Percent</u>
Public land:				
National forest	3.7	0.1	3.3	0.1
Indian	--	--	--	--
Other federal	64.9	1.1	58.2	1.9
Total federal	68.6	1.2	61.5	2.0
State	8.9	0.2	6.8	0.2
County and municipal	12.2	0.2	4.1	0.2
Total public	89.7	1.6	72.4	2.4
Private land:				
Farm	( <u>1/</u> )	--	2,534.9	82.9
Other	( <u>1/</u> )	--	450.2	14.7
Total private	5,551.1	98.4	2,985.1	97.6
All classes	5,640.8	100.0	3,057.5	100.0

1/ Data not available.

Table 3.--Commercial forest area by forest type and stand-size class, 1951

(In thousand acres)

Forest type <sup>1/</sup>	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	22.4	182.2	218.8	155.2	234.5	813.1
Slash pine	18.8	297.8	222.4	130.1	85.4	754.5
Loblolly pine	51.4	46.6	47.2	31.8	19.4	196.4
Shortleaf pine	1.2	7.0	--	12.1	1.1	21.4
Pond pine	1.2	6.6	32.8	7.6	3.8	52.0
Cypress	4.0	16.9	43.0	20.0	5.4	89.3
All sftwd. types	99.0	557.1	564.2	356.8	349.6	1,926.7
Hardwood-pine	43.6	32.9	102.3	74.8	35.7	289.3
Lowland hdwds.	81.7	70.5	217.8	195.9	39.4	605.3
Oak-hickory	7.6	1.2	35.2	82.6	35.3	161.9
Scrub oak	--	--	2.0	15.0	57.3	74.3
All hdwd. types	132.9	104.6	357.3	368.3	167.7	1,130.8
All types	231.9	661.7	921.5	725.1	517.3	3,057.5
Percent	7.6	21.7	30.1	23.7	16.9	100.0

<sup>1/</sup> See description of forest types and stand-size classes in appendix.

Table 4.--Net volume<sup>1/</sup> of saw timber by species and stand-size class, 1951

(In million board feet)

Species <sup>2/</sup>	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	138.1	623.7	217.5	95.0	94.8	1,169.1
Slash pine	127.7	1,148.5	236.0	94.2	60.8	1,667.2
Loblolly pine	364.7	282.0	114.9	39.9	32.5	834.0
Pond pine	5.5	24.6	44.4	14.5	9.6	98.6
Shortleaf pine	25.5	23.7	5.8	10.9	--	65.9
Total	661.5	2,102.5	618.6	254.5	197.7	3,834.8
Cypress	37.1	104.7	95.8	19.3	9.0	265.9
Cedar	--	--	--	--	--	--
Total sftwds.	698.6	2,207.2	714.4	273.8	206.7	4,100.7
Hardwoods:						
Bl. & tupelo gum	158.8	211.6	95.5	26.4	13.9	506.2
Sweetgum	84.9	28.0	28.3	15.5	1.5	158.2
Yellow-poplar	60.7	40.0	4.6	4.6	--	109.9
Soft maple	20.0	12.9	12.9	3.9	--	49.7
Other soft hwdws.	28.9	26.7	33.7	9.3	--	98.6
Total	353.3	319.2	175.0	59.7	15.4	922.6
White & swamp chestnut oak	26.7	5.5	25.7	--	--	57.9
Other white oaks	29.2	0.4	13.2	7.1	2.2	52.1
So. red & swamp red oaks	11.4	2.6	16.1	8.2	27.2	65.5
Other red oaks	95.5	39.3	80.4	17.7	14.7	247.6
Hickory	15.9	--	12.5	1.8	--	30.2
Ash	9.0	1.8	4.1	1.3	--	16.2
Other hard hwdws.	16.8	3.0	16.0	1.8	--	37.6
Total	204.5	52.6	168.0	37.9	44.1	507.1
Total hwdws.	557.8	371.8	343.0	97.6	59.5	1,429.7
All species	1,256.4	2,579.0	1,057.4	371.4	266.2	5,530.4
Percent	22.7	46.7	19.1	6.7	4.8	100.0

<sup>1/</sup> Log scale, International 1/4-inch rule.

<sup>2/</sup> See appendix for species combined with others.



Table 5.--Net volume<sup>1/</sup> of saw timber by species and diameter class, 1951

Species	10-12 inches <sup>2/</sup>	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	717.7	392.5	58.6	0.3	1,169.1	21.1
Slash pine	959.1	635.7	68.5	3.9	1,667.2	30.1
Loblolly pine	237.1	378.9	184.3	33.7	834.0	15.1
Pond pine	41.4	41.3	15.9	--	98.6	1.8
Shortleaf pine	41.1	19.8	5.0	--	65.9	1.2
Total	1,996.4	1,468.2	332.3	37.9	3,834.8	69.3
Cypress	162.9	70.3	17.1	15.6	265.9	4.8
Cedar	--	--	--	--	--	--
Total sftwds.	2,159.3	1,538.5	349.4	53.5	4,100.7	74.1
Hardwoods:						
Bl. & tupelo gum	157.4	299.3	35.9	13.6	506.2	9.1
Sweetgum	43.7	78.0	17.9	18.6	158.2	2.9
Yellow-poplar	9.9	67.1	29.1	3.8	109.9	2.0
Soft maple	8.6	32.4	8.7	--	49.7	0.9
Other soft hdwds.	27.7	54.3	8.7	7.9	98.6	1.8
Total	247.3	531.1	100.3	43.9	922.6	16.7
White & swamp chestnut oak	9.6	19.3	23.9	5.1	57.9	1.1
Other white oaks	7.5	24.7	17.3	2.6	52.1	0.9
So. red & swamp red oaks	8.5	25.1	22.4	9.5	65.5	1.2
Other red oaks	37.5	137.7	40.7	31.7	247.6	4.5
Hickory	4.0	16.9	7.1	2.2	30.2	0.5
Ash	3.8	12.4	--	--	16.2	0.3
Other hard hdwds.	9.6	15.1	12.9	--	37.6	0.7
Total	80.5	251.2	124.3	51.1	507.1	9.2
Total hdwds.	327.8	782.3	224.6	95.0	1,429.7	25.9
All species	2,487.1	2,320.8	574.0	148.5	5,530.4	100.0
Percent	45.0	41.9	10.4	2.7	100.0	

<sup>1/</sup> Log scale, International 1/4-inch rule.

<sup>2/</sup> Ten-inch hardwoods are not included.

Table 6.--Net volume<sup>1/</sup> of saw timber by forest type and stand-size class, 1951

(In million board feet)

Forest type <sup>2/</sup>	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	142.0	603.9	205.5	61.4	89.1	1,101.9
Slash pine	97.9	1,200.3	222.5	57.7	71.3	1,649.7
Loblolly pine	285.4	261.8	67.5	16.6	25.6	656.9
Shortleaf pine	2.8	24.5	--	12.5	--	39.8
Pond pine	6.4	7.7	34.2	2.0	7.9	58.2
Cypress	23.5	79.2	82.1	17.3	9.0	211.1
All sftwd. types	558.0	2,177.4	611.8	167.5	202.9	3,717.6
Hardwood-pine	251.7	137.4	102.2	44.4	10.5	546.2
Lowland hdwds.	428.8	260.7	303.1	120.2	27.4	1,140.2
Oak-hickory	17.9	3.5	40.3	31.2	23.3	116.2
Scrub oak	--	--	--	8.1	2.1	10.2
All hdwd. types	698.4	401.6	445.6	203.9	63.3	1,812.8
All types	1,256.4	2,579.0	1,057.4	371.4	266.2	5,530.4
Percent	22.7	46.7	19.1	6.7	4.8	100.0

<sup>1/</sup> Log scale, International 1/4-inch rule.

<sup>2/</sup> See description of forest types and stand-size classes in appendix.

Table 7.--Net volume<sup>1/</sup> of all timber by species and stand-size class, 1951  
(In thousand cords)

PRIMARY GROWING STOCK

Species	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	347	2,246	1,208	379	285	4,465
Slash pine	380	4,421	1,718	347	202	7,068
Loblolly pine	920	953	464	127	92	2,556
Pond pine	16	114	155	52	31	368
Shortleaf pine	72	109	55	30	--	266
Total	1,735	7,843	3,600	935	610	14,723
Cypress	95	447	424	58	22	1,046
Cedar	--	--	1	--	--	1
Total sftwds.	1,830	8,290	4,025	993	632	15,770
Hardwoods:						
Bl. & tupelo gum	625	1,001	791	156	35	2,608
Sweetgum	269	173	361	62	4	869
Yellow-poplar	157	165	71	13	--	406
Soft maple	116	77	78	13	--	284
Other soft hwdws.	123	87	282	34	--	526
Total	1,290	1,503	1,583	278	39	4,693
White & swamp chestnut oak	85	17	103	5	--	210
Other white oaks	75	11	33	59	25	203
So. red & swamp red oaks	39	8	158	38	66	309
Other red oaks	289	147	449	125	37	1,047
Hickory	63	--	136	18	4	221
Ash	24	5	42	4	--	75
Dogwood, persimmon	--	11	35	3	--	49
Other hard hwdws.	42	14	61	2	--	119
Total	617	213	1,017	254	132	2,233
Total hwdws.	1,907	1,716	2,600	532	171	6,926
All species	3,737	10,006	6,625	1,525	803	22,696
Percent	16.5	44.1	29.2	6.7	3.5	100.0

SECONDARY GROWING STOCK

Sound culls						
Softwoods	6	100	206	74	85	471
Hardwoods <sup>2/</sup>	851	756	1,245	647	700	4,199
Rotten culls	381	371	713	227	61	1,753
All other classes	1,238	1,227	2,164	948	846	6,423

<sup>1/</sup> Sound wood and bark.

<sup>2/</sup> Includes scrub oak and noncommercial species.

Table 8.--Net volume<sup>1/</sup> of all timber by species and diameter class, 1951

(In thousand cords)

## PRIMARY GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	358	857	1,097	993	1,025	135	4,465
Slash pine	655	1,507	1,531	1,447	1,747	181	7,068
Loblolly pine	133	296	296	393	949	489	2,556
Pond pine	29	64	75	53	111	36	368
Shortleaf pine	13	77	45	71	49	11	266
Total	1,188	2,801	3,044	2,957	3,881	852	14,723
Cypress	145	199	220	241	173	68	1,046
Cedar	1	--	--	--	--	--	1
Total sftwds.	1,334	3,000	3,264	3,198	4,054	920	15,770
Hardwoods:							
Bl. & tupelo gum	210	457	564	477	779	121	2,608
Sweetgum	107	78	280	127	192	85	869
Yellow-poplar	19	87	28	30	164	78	406
Soft maple	44	62	45	29	83	21	284
Other soft hwdws.	40	86	143	83	135	39	526
Total	420	770	1,060	746	1,353	344	4,693
White & swamp chestnut oak	27	18	19	29	49	68	210
Other white oaks	2	16	57	21	60	47	203
So. red & swamp red oaks	35	23	82	26	66	77	309
Other red oaks	93	157	173	115	340	169	1,047
Hickory	25	92	28	12	42	22	221
Ash	3	5	24	12	31	--	75
Dogwood, persimmon	10	--	33	2	4	--	49
Other hard hwdws.	1	4	26	26	32	30	119
Total	196	315	442	243	624	413	2,233
Total hwdws.	616	1,085	1,502	989	1,977	757	6,926
All species	1,950	4,085	4,766	4,187	6,031	1,677	22,696
Percent	8.6	18.0	21.0	18.4	26.6	7.4	100.0

## SECONDARY GROWING STOCK

Sound culls							
Softwoods	26	27	158	101	159	--	471
Hardwoods <sup>2/</sup>	294	488	625	785	1,281	726	4,199
Rotten culls	98	243	240	131	492	549	1,753
Total secondary	418	758	1,023	1,017	1,932	1,275	6,423

<sup>1/</sup> Sound wood and bark.<sup>2/</sup> Includes scrub oak and noncommercial species.



Table 9.--Net volume<sup>1/</sup> of all timber by species and class of material, 1951  
(In thousand cords)

Species	PRIMARY GROWING STOCK				SECONDARY GROWING STOCK	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls <sup>2/</sup>	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	2,646	604	1,215	4,465	151	23
Slash pine	3,982	924	2,162	7,068	105	12
Loblolly pine	1,711	416	429	2,556	126	9
Pond pine	219	56	93	368	30	2
Shortleaf pine	145	31	90	266	14	--
Total	8,703	2,031	3,989	14,723	426	46
Cypress	565	137	344	1,046	45	57
Cedar	--	--	1	1	--	--
Total sftwds.	9,268	2,168	4,334	15,770	471	103
Hardwoods:						
Bl. & tupelo gum	1,102	275	1,231	2,608	1,199	594
Sweetgum	326	78	465	869	154	73
Yellow-poplar	218	54	134	406	51	56
Soft maple	108	25	151	284	388	152
Other soft hdwds.	202	55	269	526	299	172
Total	1,956	487	2,250	4,693	2,091	1,047
White & swamp chestnut oak	114	32	64	210	64	24
Other white oaks	103	25	75	203	854	31
So. red & swamp red oaks	134	35	140	309	135	21
Other red oaks	484	140	423	1,047	580	484
Hickory	60	16	145	221	42	8
Ash	34	9	32	75	28	10
Dogwood, Persimmon	6	--	43	49	4	4
Scrub oak <sup>3/</sup>	--	--	--	--	307	--
Other hard hdwds.	70	18	31	119	94	21
Total	1,005	275	953	2,233	2,108	603
Total hdwds.	2,961	762	3,203	6,926	4,199	1,650
All species	12,229	2,930	7,537	22,696	4,670	1,753
Percent	53.9	12.9	33.2	100.0	72.7	27.3

<sup>1/</sup> Sound wood and bark.

<sup>2/</sup> Includes limb volume of sound hardwood saw-timber trees.

<sup>3/</sup> Includes noncommercial species.

Table 10.--Net volume<sup>1/</sup> of all timber by forest type and stand-size class, 1951  
(In thousand cords)

PRIMARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	348	2,139	1,188	219	264	4,158
Slash pine	319	4,759	1,695	237	230	7,240
Loblolly pine	782	928	338	66	74	2,188
Shortleaf pine	10	141	--	45	--	196
Pond pine	16	42	150	12	22	242
Cypress	51	347	501	47	22	968
All sftwd. types	1,526	8,356	3,872	626	612	14,992
Hardwood-pine	778	557	626	260	36	2,257
Lowland hdwds.	1,373	1,080	1,841	497	69	4,860
Oak-hickory	60	13	286	120	78	557
Scrub oak	--	--	--	22	8	30
All hdwd. types	2,211	1,650	2,753	899	191	7,704
All types	3,737	10,006	6,625	1,525	803	22,696
Percent	16.5	44.1	29.2	6.7	3.5	100.0

SECONDARY GROWING STOCK

Longleaf pine	44	86	70	19	145	364
Slash pine	52	272	164	45	40	573
Loblolly pine	120	97	102	76	10	405
Shortleaf pine	4	2	--	4	2	12
Pond pine	5	--	14	5	--	24
Cypress	25	53	100	9	4	191
All sftwd. types	250	510	450	158	201	1,569
Hardwood-pine	245	105	190	71	26	637
Lowland hdwds.	720	611	1,421	548	368	3,668
Oak-hickory	23	1	101	156	131	412
Scrub oak	--	--	2	15	120	137
All hdwd. types	988	717	1,714	790	645	4,854
All types	1,238	1,227	2,164	948	846	6,423
Percent	19.3	19.1	33.7	14.7	13.2	100.0

<sup>1/</sup> Sound wood and bark.

Table 11.--Net volume<sup>1/</sup> of pole-timber trees by forest type and stand-size class,

1951

(In thousand cords)

PRIMARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	7	430	598	52	16	1,103
Slash pine	47	1,208	1,039	67	34	2,395
Loblolly pine	86	220	152	23	6	487
Shortleaf pine	4	72	--	11	--	87
Pond pine	--	20	55	5	--	80
Cypress	--	130	279	--	--	409
All sftwd. types	144	2,080	2,123	158	56	4,561
Hardwood-pine	161	188	345	135	8	837
Lowland hdwds.	292	374	1,036	177	--	1,879
Oak-hickory	14	4	180	40	20	258
Scrub oak	--	--	--	--	2	2
All hdwd. types	467	566	1,561	352	30	2,976
All types	611	2,646	3,684	510	86	7,537
Percent	8.1	35.1	48.9	6.8	1.1	100.0

SECONDARY GROWING STOCK

Longleaf pine	3	18	21	5	35	82
Slash pine	14	98	55	21	21	209
Loblolly pine	45	44	22	1	--	112
Shortleaf pine	3	--	--	--	--	3
Pond pine	--	--	--	--	--	--
Cypress	6	42	77	5	1	131
All sftwd types	71	202	175	32	57	537
Hardwood-pine	84	28	94	9	13	228
Lowland hdwds.	163	238	564	118	75	1,158
Oak-hickory	2	--	44	34	16	96
Scrub oak	--	--	--	8	83	91
All hdwd. types	249	266	702	169	187	1,573
All types	320	468	877	201	244	2,110
Percent	15.2	22.2	41.6	9.5	11.5	100.0

<sup>1/</sup> Sound wood and bark.



Table 12.--Net volume<sup>1/</sup> of all timber by species and diameter class, 1951

(In million cubic feet)

## PRIMARY GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	20.9	57.7	81.5	76.7	81.4	11.5	329.7
Slash pine	37.4	100.6	111.1	111.7	139.4	15.2	515.4
Loblolly pine	7.8	19.7	21.4	30.0	75.6	41.4	195.9
Pond pine	1.6	4.3	5.1	3.9	8.6	3.1	26.6
Shortleaf pine	0.8	5.1	3.3	5.5	3.8	0.9	19.4
Total	68.5	187.4	222.4	227.8	308.8	72.1	1,087.0
Cypress	9.7	14.6	17.5	20.4	15.0	6.5	83.7
Cedar	0.1	--	--	--	--	--	0.1
Total sftwds.	78.3	202.0	239.9	248.2	323.8	78.6	1,170.8
Hardwoods:							
Bl. & tupelo gum	13.1	29.8	39.3	35.7	62.4	9.7	190.0
Sweetgum	6.4	5.3	19.4	9.3	15.8	7.0	63.2
Yellow-poplar	1.1	5.8	1.9	2.1	13.5	6.3	30.7
Soft maple	2.8	4.1	3.1	2.0	6.6	1.7	20.3
Other soft hwdws.	2.6	5.6	9.9	6.0	11.0	3.2	38.3
Total	26.0	50.6	73.6	55.1	109.3	27.9	342.5
White & swamp chestnut oak	1.6	1.2	1.3	2.1	3.9	5.6	15.7
Other white oaks	0.1	1.1	4.0	1.6	5.0	3.8	15.6
So. red & swamp red oaks	2.2	1.6	5.7	1.9	5.1	6.3	22.8
Other red oak	5.9	10.1	12.1	8.1	27.7	13.9	77.8
Hickory	1.6	6.0	1.9	0.9	3.5	1.8	15.7
Ash	0.2	0.3	1.7	0.8	2.5	--	5.5
Dogwood, persimmon	0.6	--	2.3	0.1	0.4	--	3.4
Other hard hwdws.	0.1	0.3	1.8	1.9	2.6	2.5	9.2
Total	12.3	20.6	30.8	17.4	50.7	33.9	165.7
Total hwdws.	38.3	71.2	104.4	72.5	160.0	61.8	508.2
All species	116.6	273.2	344.3	320.7	483.8	140.4	1,679.0
Percent	6.9	16.3	20.5	19.1	28.8	8.4	100.0

## SECONDARY GROWING STOCK

Sound culls							
Softwoods	1.5	1.9	10.1	7.8	12.7	--	34.0
Hardwoods <sup>2/</sup>	19.7	32.6	43.6	50.1	101.3	58.4	305.7
Rotten culls	5.8	16.6	16.8	12.5	38.1	45.7	135.5
Total secondary	27.0	51.1	70.5	70.4	152.1	104.1	475.2

<sup>1/</sup> Excluding bark.<sup>2/</sup> Includes scrub oak and noncommercial species.



Table 13.--Net volume<sup>1/</sup> of all timber by species and class of material, 1951  
(In million cubic feet)

Species	PRIMARY GROWING STOCK				SECONDARY GROWING STOCK	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls <sup>2/</sup>	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	203.0	48.1	78.6	329.7	10.4	1.7
Slash pine	306.8	70.6	138.0	515.4	7.5	1.0
Loblolly pine	135.4	33.0	27.5	195.9	9.5	0.6
Pond pine	17.0	3.7	5.9	26.6	2.2	0.1
Shortleaf pine	10.9	2.6	5.9	19.4	0.9	--
Total	673.1	158.0	255.9	1,087.0	30.5	3.4
Cypress	48.6	10.8	24.3	83.7	3.5	5.1
Cedar	--	--	0.1	0.1	--	--
Total sftwds.	721.7	168.8	280.3	1,170.8	34.0	8.5
Hardwoods:						
Bl. & tupelo gum	87.2	20.6	82.2	190.0	84.5	43.0
Sweetgum	25.8	6.3	31.1	63.2	12.0	5.3
Yellow-poplar	17.6	4.3	8.8	30.7	4.2	4.5
Soft maple	8.3	2.0	10.0	20.3	26.3	10.6
Other soft hdwds.	16.2	4.0	18.1	38.3	22.1	13.7
Total	155.1	37.2	150.2	342.5	149.1	77.1
White & swamp chestnut oak	9.3	2.3	4.1	15.7	5.0	2.2
Other white oaks	8.3	2.1	5.2	15.6	65.0	2.7
So. red & swamp red oaks	10.7	2.6	9.5	22.8	10.2	1.8
Other red oaks	39.7	10.0	28.1	77.8	42.3	39.7
Hickory	4.9	1.3	9.5	15.7	3.0	0.7
Ash	2.7	0.6	2.2	5.5	2.1	0.9
Dogwood, persimmon	0.4	0.1	2.9	3.4	0.4	0.3
Scrub oak <sup>3/</sup>	--	--	--	--	20.9	--
Other hard hdwds.	5.6	1.4	2.2	9.2	7.7	1.6
Total	81.6	20.4	63.7	165.7	156.6	49.9
Total hdwds.	236.7	57.6	213.9	508.2	305.7	127.0
All species	958.4	226.4	494.2	1,679.0	339.7	135.5
Percent	57.1	13.5	29.4	100.0	71.5	28.5

<sup>1/</sup> Excluding bark.

<sup>2/</sup> Includes limb volume of sound hardwood saw-timber trees.

<sup>3/</sup> Includes noncommercial species.

Table 14.--Average volume<sup>1/</sup> per acre of saw timber by forest type,  
species group, and stand-size class, 1951

(In board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole- timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	6,178	3,303	906	368	1,330
Hardwood	157	12	33	18	25
Slash pine					
Softwood	4,269	3,879	951	588	2,086
Hardwood	928	152	49	12	101
Loblolly pine					
Softwood	4,818	5,313	1,368	631	3,016
Hardwood	733	296	62	194	328
Shortleaf pine					
Softwood	2,001	3,510	--	871	1,793
Hardwood	436	--	--	75	69
Pond pine					
Softwood	4,769	1,163	1,041	871	1,103
Hardwood	735	--	--	--	16
Cypress					
Softwood	5,213	4,428	1,800	1,040	2,237
Hardwood	630	248	107	--	127
Hardwood-pine					
Softwood	3,223	1,911	549	378	1,041
Hardwood	2,554	2,272	449	119	847
Lowland hardwoods					
Softwood	693	459	301	241	349
Hardwood	4,552	3,238	1,091	386	1,534
Oak-hickory					
Softwood	804	--	184	211	231
Hardwood	1,546	2,943	963	251	487
Scrub oak					
Softwood	--	--	--	97	95
Hardwood	--	--	--	43	42
All types					
Softwood	3,012	3,336	775	387	1,341
Hardwood	2,405	562	372	126	468

<sup>1/</sup> Log scale, International 1/4-inch rule.

Table 15.--Average volume<sup>1/</sup> per acre of all trees by forest type, species group,  
and stand-size class, 1951  
(In standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole- timber stands		Other stand sizes		All stands	
	Sound <sup>2/</sup>	Cull <sup>2/</sup>	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	15.1	--	11.7	0.3	5.1	0.2	1.2	0.2	5.0	0.2
Hardwood	0.4	2.0	0.1	0.2	0.3	0.1	(3/)	0.2	0.1	0.2
Slash pine										
Softwood	14.0	0.1	15.0	0.2	7.2	0.2	2.1	0.1	9.0	0.2
Hardwood	3.0	2.7	1.0	0.7	0.4	0.5	(3/)	0.3	0.6	0.6
Loblolly pine										
Softwood	12.6	0.1	17.9	0.1	6.0	1.8	2.2	0.5	9.6	0.6
Hardwood	2.6	2.3	2.0	2.0	1.2	0.4	0.5	1.1	1.6	1.5
Shortleaf pine										
Softwood	4.4	--	20.2	0.3	--	--	2.3	0.2	8.3	0.2
Hardwood	4.4	3.6	--	--	--	--	1.1	0.3	0.9	0.4
Pond pine										
Softwood	12.1	--	6.4	--	4.5	0.4	3.0	0.4	4.6	0.4
Hardwood	1.7	4.3	--	--	0.1	--	--	--	0.1	0.1
Cypress										
Softwood	11.2	--	18.5	0.3	7.9	0.6	2.7	0.4	8.6	0.5
Hardwood	1.5	6.2	2.0	2.8	3.7	1.7	--	0.2	2.2	1.7
Hardwood-pine										
Softwood	7.9	(3/)	7.4	0.2	2.6	0.1	1.4	0.1	3.5	0.1
Hardwood	10.0	5.6	9.5	3.0	3.5	1.8	1.3	0.8	4.3	2.1
Lowland hardwoods										
Softwood	1.9	0.1	1.8	0.1	1.0	0.1	0.8	0.1	1.1	0.1
Hardwood	14.9	8.7	13.5	8.6	7.4	6.4	1.6	3.8	6.9	6.0
Oak-hickory										
Softwood	2.0	--	--	--	0.9	--	0.8	(3/)	0.8	(3/)
Hardwood	5.9	3.0	10.8	0.8	7.2	2.9	0.9	2.4	2.6	2.5
Scrub oak										
Softwood	--	--	--	--	--	--	0.3	(3/)	0.3	(3/)
Hardwood	--	--	--	--	--	1.0	0.1	1.8	0.1	1.8
All types										
Softwood	7.9	(3/)	12.5	0.2	4.4	0.3	1.3	0.1	5.2	0.2
Hardwood	8.2	5.3	2.6	1.6	2.8	2.1	0.6	1.3	2.3	1.9

<sup>1/</sup> Sound wood and bark.

<sup>2/</sup> Sound trees; cull trees.

<sup>3/</sup> Less than 0.05 cords per acre.

Table 16.--Number<sup>1/</sup> of turpentine pine trees by working status  
and tree size, 1951

(In thousands of trees)

Working status	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber	62,742	25,384	1,453	89,579
Working timber				
Front-faced	258	5,844	237	6,339
Back-faced	96	2,352	477	2,925
Resting timber	118	3,056	730	3,904
Worked-out timber	173	1,144	370	1,687
All classes	63,387	37,780	3,267	104,434

<sup>1/</sup> Includes sound cull trees.

Table 17.--Area of turpentine pine types by working status,  
1951

Crop working status	Area	
	<u>Thousand acres</u>	<u>Percent</u>
Round timber	464.1	26.6
Working timber		
Front-faced	201.4	11.5
Back-faced	136.6	7.8
Resting timber	94.5	5.4
Worked-out timber	26.8	1.5
No status <sup>1/</sup>	824.0	47.2
All classes	1,747.4	100.0

<sup>1/</sup> Includes areas having insufficient stocking of turpentine trees 9.0 inches d.b.h. and larger.



Table 18.--Area of stump land and tonnage of wood naval stores stumps  
by availability class, 1951

Availability class	Area	Tonnage <sup>1/</sup>
	<u>Thousand acres</u>	<u>Thousand tons</u>
Merchantable area	1,665.7	6,433
Marginal area <sup>2/</sup>	43.1	135
Potential area <sup>3/</sup>	348.1	1,564
Inaccessible area	159.9	615
All classes	2,216.8	8,747

<sup>1/</sup> Includes stumps on agricultural land.

<sup>2/</sup> Stump-land areas less than 25 acres in extent and partially worked areas.

<sup>3/</sup> Areas unworkable at present due to density of timber stands.

Table 19.--Number of trees<sup>1/</sup> by species group, quality class, and tree size,  
1951

(In thousands of trees)

Species group and quality class	Sapling- size trees	Pole- size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines:					
Sound trees	164,537	72,943	43,783	4,836	286,099
Sound culls	5,797	1,265	1,938	247	9,247
Rotten culls	1,029	235	254	56	1,574
Total	171,363	74,443	45,975	5,139	296,920
Other softwoods:					
Sound trees	29,382	9,673	3,741	250	43,046
Sound culls	569	200	319	--	1,088
Rotten culls	1,064	223	259	101	1,647
Total	31,015	10,096	4,319	351	45,781
Soft-textured hwdws.:					
Sound trees	213,168	38,455	7,985	2,538	262,146
Sound culls	50,670	17,018	3,358	715	71,761
Rotten culls	24,347	12,978	1,997	1,336	40,658
Total	288,185	68,451	13,340	4,589	374,565
Hard-textured hwdws.:					
Sound trees	104,722	16,954	2,531	1,779	125,986
Sound culls <sup>2/</sup>	105,639	14,638	2,825	1,330	124,432
Rotten culls	6,433	1,920	945	861	10,159
Total	216,794	33,512	6,301	3,970	260,577
All species	707,357	186,502	69,935	14,049	977,843

<sup>1/</sup> All trees 1.0 inch d.b.h. and larger.

<sup>2/</sup> Includes scrub oak and noncommercial trees.

Table 20.--Area<sup>1/</sup> of seedling, sapling, and poorly stocked stands by  
plantability class, 1951

Forest type	No planting required <sup>2/</sup>	Suitable for machine planting	Hand planting required	All classes
	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>
Longleaf pine	289.1	71.0	29.6	389.7
Slash pine	168.9	22.9	23.7	215.5
Loblolly pine	37.9	5.6	7.7	51.2
Shortleaf pine	10.9	2.3	--	13.2
Pond pine	11.4	--	--	11.4
Hardwood-pine	84.3	11.9	14.3	110.5
Oak-hickory	79.8	12.0	26.1	117.9
Scrub oak	16.6	16.7	39.0	72.3
All types	698.9	142.4	140.4	981.7
Percent	71.2	14.5	14.3	100.0

<sup>1/</sup> Acreage of cypress and lowland hardwood types excluded.

<sup>2/</sup> Sufficient seed trees present or area is restocking naturally.

Table 21.--Commercial forest area by type and degree of stocking, 1951

## STOCKING IN ALL SOUND TREES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>
Longleaf pine	153.9	319.7	175.5	76.3	87.7	813.1
Slash pine	41.8	156.8	149.7	58.1	348.1	754.5
Loblolly pine	11.5	25.2	28.4	23.8	107.5	196.4
Shortleaf pine	--	6.6	3.2	3.5	8.1	21.4
Pond pine	1.1	18.8	8.3	7.8	16.0	52.0
Cypress	3.4	8.4	15.2	8.1	54.2	89.3
Hardwood-pine	33.7	53.3	36.6	42.8	122.9	289.3
Lowland hdwds.	24.2	79.3	82.8	58.5	360.5	605.3
Oak-hickory	23.3	42.1	29.9	15.5	51.1	161.9
Scrub oak	57.3	9.1	2.3	5.6	--	74.3
All types	350.2	719.3	531.9	300.0	1,156.1	3,057.5
Percent	11.5	23.5	17.4	9.8	37.8	100.0

## STOCKING IN SOUND TREES 5.0 INCHES AND LARGER

Longleaf pine	301.4	335.7	109.8	51.0	15.2	813.1
Slash pine	160.3	294.6	139.4	79.0	81.2	754.5
Loblolly pine	46.1	68.9	43.6	18.0	19.8	196.4
Shortleaf pine	5.5	7.8	4.6	--	3.5	21.4
Pond pine	7.9	36.3	6.7	1.1	--	52.0
Cypress	19.8	21.8	24.1	9.0	14.6	89.3
Hardwood-pine	100.1	104.4	43.1	23.7	18.0	289.3
Lowland hdwds.	179.6	216.5	119.9	41.6	47.7	605.3
Oak-hickory	88.8	56.1	11.2	1.1	4.7	161.9
Scrub oak	71.1	3.2	--	--	--	74.3
All types	980.6	1,145.3	502.4	224.5	204.7	3,057.5
Percent	32.1	37.5	16.4	7.3	6.7	100.0

## STOCKING IN SOUND SAW-TIMBER TREES

Longleaf pine	417.4	305.3	66.3	22.2	1.9	813.1
Slash pine	288.3	285.9	133.2	32.5	14.6	754.5
Loblolly pine	64.5	77.2	38.0	14.4	2.3	196.4
Shortleaf pine	9.8	8.1	3.5	--	--	21.4
Pond pine	27.4	23.4	1.2	--	--	52.0
Cypress	37.8	25.5	19.3	2.3	4.4	89.3
Hardwood-pine	143.1	111.3	24.7	10.2	--	289.3
Lowland hdwds.	275.8	237.2	72.2	12.8	7.3	605.3
Oak-hickory	112.8	49.1	--	--	--	161.9
Scrub oak	73.1	1.2	--	--	--	74.3
All types	1,450.0	1,124.2	358.4	94.4	30.5	3,057.5
Percent	47.4	36.8	11.7	3.1	1.0	100.0



Table 22.--County area by broad use class, 1951

County	Total area <sup>1/</sup>	Non-forest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Percent</u>
Baker	227.9	110.5	7.2	--	110.2	49.9
Ben Hill	163.2	59.0	0.2	--	104.0	63.8
Berrien	300.8	88.8	1.0	--	211.0	70.4
Brooks	318.1	148.6	2.7	--	166.8	52.9
Colquitt	360.3	184.4	0.7	--	175.2	48.7
Cook	149.1	60.8	0.7	--	87.6	59.0
Crisp	190.7	110.7	1.7	--	78.3	41.4
Decatur	392.3	136.5	3.8	--	252.0	64.9
Dooly	252.8	154.2	1.6	--	97.0	38.6
Early	336.6	185.6	1.3	--	149.7	44.6
Grady	298.9	122.0	0.6	--	176.3	59.1
Irwin	238.1	104.8	0.3	--	133.0	55.9
Lanier	117.1	18.4	4.0	--	94.7	83.7
Lowndes	327.7	116.4	3.9	--	207.4	64.1
Miller	183.7	96.5	0.9	--	86.3	47.2
Mitchell	327.0	192.6	1.6	--	132.8	40.8
Seminole	177.3	77.8	3.5	--	96.0	55.2
Thomas	347.5	145.8	4.2	--	197.5	57.5
Tift	170.2	89.5	0.2	--	80.5	47.4
Turner	187.5	87.8	0.2	--	99.5	53.1
Wilcox	245.8	116.8	1.6	--	127.4	52.2
Worth	371.2	175.8	1.1	--	194.3	52.5
Unit total	5,683.8	2,583.3	43.0	--	3,057.5	54.2

<sup>1/</sup> Gross area from Bureau of the Census, 1940.

Table 23.--Ownership of commercial forest land by county, 1951

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	<u>Thousand acres</u>	<u>Percent</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Thousand acres</u>	<u>Percent</u>
Baker	110.2	100.0	--	--	--	--	--	--
Ben Hill	103.9	99.9	--	--	--	0.1	0.1	0.1
Berrien	208.2	98.7	--	--	2.7	0.1	2.8	1.3
Brooks	166.7	99.9	--	--	--	0.1	0.1	0.1
Colquitt	175.1	99.9	--	--	--	0.1	0.1	0.1
Cook	87.5	99.9	--	--	(1/)	0.1	0.1	0.1
Crisp	77.3	98.7	--	--	0.9	0.1	1.0	1.3
Decatur	222.8	88.4	--	26.0	1.5	1.7	29.2	11.6
Dooly	93.7	96.6	3.3	--	--	(1/)	3.3	3.4
Early	148.6	99.3	--	--	1.1	(1/)	1.1	0.7
Grady	176.2	99.9	--	--	--	0.1	0.1	0.1
Irwin	133.0	100.0	--	--	(1/)	--	(1/)	--
Lanier	86.1	90.9	--	8.6	--	--	8.6	9.1
Lowndes	205.8	99.2	--	0.9	--	0.7	1.6	0.8
Miller	86.3	100.0	--	--	--	(1/)	(1/)	--
Mitchell	132.7	99.9	--	--	--	0.1	0.1	0.1
Seminole	73.3	76.4	--	22.7	--	(1/)	22.7	23.6
Thomas	196.9	99.7	--	(1/)	--	0.6	0.6	0.3
Tift	79.8	99.1	--	--	0.6	0.1	0.7	0.9
Turner	99.4	99.9	--	--	--	0.1	0.1	0.1
Wilcox	127.4	100.0	--	--	--	(1/)	(1/)	--
Worth	194.2	99.9	--	--	--	0.1	0.1	0.1
Unit total	2,985.1	97.6	3.3	58.2	6.8	4.1	72.4	2.4

1/ Less than 50 acres.

Table 24.--Net volume<sup>1/</sup> of saw timber by county and species group, 1951

(In million board feet)

County	Softwoods <sup>2/</sup>	Gum, maple, and yellow- poplar <sup>3/</sup>	Other hardwoods	All species
Baker	177.3	2.5	21.1	200.9
Ben Hill	244.8	28.5	1.8	275.1
Berrien	269.7	89.5	8.6	367.8
Brooks	191.2	31.8	51.7	274.7
Colquitt	200.3	21.8	9.9	232.0
Cook	100.4	39.3	11.2	150.9
Crisp	117.5	24.1	12.6	154.2
Decatur	226.1	77.5	61.3	364.9
Dooly	101.3	63.0	24.7	189.0
Early	92.8	56.1	53.0	201.9
Grady	237.3	82.9	48.3	368.5
Irwin	199.6	32.3	4.7	236.6
Lanier	173.3	24.6	8.6	206.5
Lowndes	304.0	78.5	12.5	395.0
Miller	68.3	6.4	26.5	101.2
Mitchell	192.1	6.5	20.7	219.3
Seminole	86.0	28.8	19.1	133.9
Thomas	391.1	54.5	60.4	506.0
Tift	136.2	25.6	9.1	170.9
Turner	152.6	41.9	1.8	196.3
Wilcox	162.7	56.0	29.6	248.3
Worth	276.1	50.5	9.9	336.5
Unit total	4,100.7	922.6	507.1	5,530.4

<sup>1/</sup> Log scale, International 1/4-inch rule.

<sup>2/</sup> Includes pine, cypress, and cedar.

<sup>3/</sup> Includes other soft-textured hardwoods.

Table 25.--Net volume<sup>1/</sup> of saw timber by county, broad species group, and diameter-class group, 1951

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9-14 inches	15+ inches	11-14 inches	15+ inches		
	<u>Million bd. ft.</u>	<u>Million bd. ft.</u>	<u>Million bd. ft.</u>	<u>Million bd. ft.</u>	<u>Percent</u>	<u>Percent</u>
Baker	93.8	83.5	11.3	12.3	88	12
Ben Hill	179.2	65.6	18.0	12.3	89	11
Berrien	231.4	38.3	76.7	21.4	73	27
Brooks	168.3	22.9	31.5	52.0	70	30
Colquitt	170.0	30.3	14.9	16.8	86	14
Cook	77.5	22.9	23.5	27.0	66	34
Crisp	76.9	40.6	20.8	15.9	76	24
Decatur	136.4	89.7	55.4	83.4	62	38
Dooly	73.8	27.5	36.7	51.0	54	46
Early	83.6	9.2	52.5	56.6	46	54
Grady	92.8	144.5	64.8	66.4	64	36
Irwin	157.5	42.1	14.3	22.7	84	16
Lanier	158.7	14.6	20.0	13.2	84	16
Lowndes	217.4	86.6	45.1	45.9	77	23
Miller	60.4	7.9	14.2	18.7	68	32
Mitchell	147.0	45.1	14.1	13.1	88	12
Seminole	60.9	25.1	26.7	21.2	64	36
Thomas	200.1	191.0	44.4	70.5	77	23
Tift	109.2	27.0	16.0	18.7	80	20
Turner	120.6	32.0	17.3	26.4	78	22
Wilcox	108.5	54.2	21.4	64.2	66	34
Worth	226.6	49.5	28.3	32.1	82	18
Unit total	2,950.6	1,150.1	667.9	761.8	74	26

<sup>1/</sup> Log scale, International 1/4-inch rule.



Table 26.--Net volume<sup>1/</sup> of all timber by county, pulping species group, and tree diameter group, 1951

(In thousand cords)

## PRIMARY GROWING STOCK

County	Yellow pines		Other softwoods		Soft-textured hwdws.		Hard-textured hwdws.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Baker	222	208	20	52	4	3	16	44	569
Ben Hill	620	300	--	--	28	57	14	2	1,021
Berrien	1,211	211	108	12	161	140	17	17	1,877
Brooks	697	114	113	5	381	60	135	116	1,621
Colquitt	608	177	2	--	82	43	21	24	957
Cook	231	112	16	6	85	83	21	24	578
Crisp	240	147	7	15	58	51	32	21	571
Decatur	566	285	10	6	256	143	269	121	1,656
Dooly	193	113	29	10	96	121	28	50	640
Early	269	33	68	20	272	102	103	111	978
Grady	233	434	--	--	382	118	165	95	1,427
Irwin	494	243	28	3	121	76	--	11	976
Lanier	601	120	74	9	183	39	4	18	1,048
Lowndes	615	300	128	30	109	153	50	28	1,413
Miller	304	52	17	3	18	7	47	51	499
Mitchell	346	250	--	--	90	9	44	34	773
Seminole	200	110	14	15	39	55	33	33	499
Thomas	556	657	1	4	294	96	120	136	1,864
Tift	370	143	43	16	94	44	14	19	743
Turner	423	156	70	17	103	84	8	1	862
Wilcox	314	210	30	16	93	118	19	64	864
Worth	677	358	28	2	47	95	36	17	1,260
Unit total	9,990	4,733	806	241	2,996	1,697	1,196	1,037	22,696

## SECONDARY GROWING STOCK

Baker	9	6	1	--	21	21	165	217	440
Ben Hill	13	--	1	--	39	46	24	9	132
Berrien	9	--	8	8	171	38	27	9	270
Brooks	4	2	1	6	76	50	48	94	281
Colquitt	11	--	--	--	130	69	9	11	230
Cook	9	6	3	--	108	61	30	23	240
Crisp	4	10	--	--	76	59	22	24	195
Decatur	41	14	--	--	42	127	125	121	470
Dooly	16	13	1	5	59	49	38	35	216
Early	6	--	5	--	108	70	112	201	502
Grady	35	14	--	--	148	127	48	157	529
Irwin	13	13	9	13	115	38	15	10	226
Lanier	10	15	4	2	90	22	21	10	174
Lowndes	2	--	11	--	106	142	86	130	477
Miller	16	--	1	--	19	30	54	187	307
Mitchell	4	--	--	--	8	23	11	105	151
Seminole	5	4	1	--	52	40	48	105	255
Thomas	7	16	--	--	114	61	31	178	407
Tift	7	4	3	3	116	41	5	13	192
Turner	16	8	2	1	77	45	25	3	177
Wilcox	35	19	--	2	55	47	39	51	248
Worth	18	38	11	--	138	64	13	22	304
Unit total	290	182	62	40	1,868	1,270	996	1,715	6,423

<sup>1/</sup> Sound wood and bark. Limbs of sound sawlog-size hardwoods are included in secondary growing stock volumes.

## DEFINITION OF TERMS

### Land-Use Classes

Forest land. Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing saw timber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land which is (a) incapable of yielding wood products (usually saw timber) because of adverse site conditions, or (b) so inaccessible as to be permanently unavailable economically, and (c) not withdrawn for specific purposes.

Reserved: Public forest land that has been withdrawn from timber utilization through statute, ordinance, or administrative order.

Reserved commercial: Reserved forest land that otherwise qualifies as commercial forest land.

Reserved noncommercial: Reserved forest land that otherwise qualifies as noncommercial forest land.

Non-forest land. Includes land in any of the following classes:

Active agriculture: Land under cultivation or in pasture including farm yards and work lots.

Pasture: Land under fence used primarily for grazing purposes where the timber has been cleared to less than 10-percent stocking and a real attempt to produce a sod has been made.

Idle agriculture: Land previously cultivated or pastured but now idle or abandoned and having less than a ten-percent stocking of forest trees.

Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.

Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water. Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

### Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Pine types: Forests in which 50 percent or more of the stand is in pine species. The predominating pine species is used to determine the specific pine type.

Hardwood-pine types: Forests in which 50 percent or more of the stand is composed of hardwood species, but which contain 25 to 50 percent pine.

Lowland hardwood type: Forests on low, moist, or wet sites in which 50 percent or more of the stand is mixed hardwoods including tupelo, black gum, sweetgum, ash, oak, elm, soft maple, and cottonwood, except where pine comprises 25 to 50 percent of the stand.

Cypress type: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25 to 50 percent of the stand.

Oak-hickory type: Forests in which 50 percent or more of the stand is upland oaks, hickory, yellow-poplar, gums, and other hardwoods, except where pines comprise 25 to 50 percent of the stand.

Scrub oak type: Forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25 to 50 percent of the stand.

### Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:



Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Pole timber. Stands failing to meet the minimum saw-timber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings. Stands not qualifying as saw-timber or pole-timber stands, but having at least a 10-percent stocking with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas. Forest areas not qualifying as saw-timber, pole-timber, or seedling and sapling stands.

### Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

### Growing Stock Classification

#### Primary Growing Stock.

Sound saw-timber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees: Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole- or saw-timber size trees of sound quality.

#### Secondary Growing Stock.

Sound cull trees: Live trees of all sizes that fail to qualify as sound timber because of poor form, excessive limbiness, or



other sound defect. Volumes shown for sound cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber size hardwoods. Scrub oak and noncommercial species such as ironwood, blue beech, sassafras, etc., are included in this group.

Rotten cull trees: Live trees of all sizes that fail to qualify as sound timber because of rotten defect.

### Species Groups

Yellow pines. Includes longleaf, slash, loblolly, pond, and shortleaf pine.

Other softwoods. Pond cypress, baldcypress, eastern redcedar, and Atlantic white cedar.

Soft-textured hardwoods. Black and tupelo gum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, and willow.

Hard-textured hardwoods. All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

### Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber size hardwoods is included as sound cull material.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula  $V = .905 (0.22D^2 - 0.71D)$ . The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

## Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have not been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

Front-faced: Turpentine tree species on which the front or first face is now being worked.

Back-faced: Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out or abandoned front face and on which back-facing has not been started.

Worked-out. Longleaf and slash pine trees on which two or more faces have been worked out and with no possibility of supporting another face.

## Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

<u>D.b.h.</u>	<u>Minimum number trees per acre</u>
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

## RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area. The sampling intensity of the 1951 survey was sufficient to provide an estimate of the total forest acreage in the Unit with a standard error of  $\pm 1.0$  percent. The probabilities are two out of three that the estimated forest acreage is within  $\pm 1.0$  percent of the actual acreage.

Cubic volume. The standard error of the 1951 net cubic-foot volume in the Unit was  $\pm 2.8$  percent. Here again, the probabilities are two out of three that the estimated volume does not vary from the actual volume by more than this percentage. The standard error of the volume in cords was not computed but it should be approximately the same.

Board-foot volume. The standard error of the 1951 estimate of board-foot volume in the Unit was  $\pm 3.1$  percent.

Use of county data. The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed  $\pm 15$  percent. The actual range of error of the cubic volume estimates by county is from  $\pm 7.0$  percent to  $\pm 14.7$  percent. The errors of board-foot volume estimates by county range from  $\pm 6.9$  percent to  $\pm 15.2$  percent, and of forest area from  $\pm 2.3$  percent to  $\pm 4.8$  percent.

In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the timber volume data for four counties with errors ranging from 11 to 15 percent resulted in a total volume estimate with only 7 percent error.



## HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



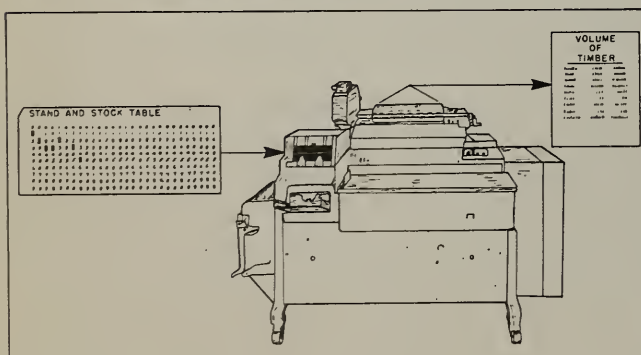
1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.



2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.



3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber drain is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.



FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

- No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.
- No. 22 - Southern Forests as a Source of Pulpwood.
- No. 23 - 1946 Pulpwood Production by County in the Southeast.
- No. 24 - Southern Pulpwood Production and the Timber Supply.
- No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.
- No. 26 - 1946 Commodity Drain by County from South Carolina Forests.
- No. 27 - 1947 Pulpwood Production by County in the Southeast.
- No. 28 - South Carolina's Forest Resources, 1947.
- No. 29 - 1948 Pulpwood Production by County in the Southeast.
- No. 30 - Forest Resources of Northeast Florida, 1949.
- No. 31 - Forest Resources of Central Florida, 1949.
- No. 32 - Forest Resources of Northwest Florida, 1949.
- No. 33 - Forest Resources of South Florida, 1949.
- No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948.
- No. 35 - 1949 Pulpwood Production in the South.
- No. 36 - Forest Statistics for Florida, 1949.

OTHER BULLETINS

- Pulpwood Production in the South, 1950. Forest Survey Release No. 69.
- Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681.
- The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3.

